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Appellants	:	Alessandro Muti et al.	
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Title	:	SYSTEM AND METHOD FOR TRANSFERRING DATA OVER A NETWORK	
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APPELLANTS' APPEAL BRIEF

This is an Appeal from a final Office Action dated 08/19/2005, rejecting claims 1-10 and 12-30. These claims have been at least twice rejected. Appellants, having filed a Notice of Appeal (filed 01/17/2006) within the time period provided under § 1.134 accompanied by the fee set forth in 37 C.F.R. § 41.20(b)(1), do hereby submit this Appeal Brief prior to the two-month deadline of 03/17/2006 along with the fee set forth in §41.20(b)(2). The Commissioner is hereby authorized to charge any additional fee that may be due, or credit any overpayment, to Deposit Account No. 19-2112.

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Contents

Note: Neither an Evidence Appendix nor a Related Proccedings Appenddix is included because both are inappliable in this case.

I. REAL PARTY IN INTEREST

The real party in interest is MICROSOFT CORPORATION, a corporation of the State of Washington, United States of America.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF CLAIMS

Claims 1-10 and 12-30 are pending, and the rejection of each of those claims is being appealed. Claim 11 has been canceled, and claims 29 and 30 were added by amendment.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final Office Action dated 08/19/2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The instant Application includes four independent claims: 1, 22, 25, and 28. The present invention is defined by the claims, but summarily, the invention is directed to transferring data over a network interface in a manner that minimizes interference with other network activity at that network interface. *See, e.g., Specification*, p. 28, lines 2-11. It is often desirable to transfer new or updated software to users' personal computers (PCs) from a remote location over a network (e.g., the Internet). However, because network interfaces for PCs have limited bandwidth, conventional methods of transferring new and updated software often interfere with PC users' ability to engage in other network activity. The present invention, among other things, provides for an effective method of transferring data so that interference with other network activity is minimized. *Id.* at p. 2, lines 17-18; p. 12, lines 6-9. Non-limiting examples of data that can be transferred include software updates, text, image, and audio data. *Id.* at p. 20, lines 18-23. Interference is minimized by transferring data at a time when the network bandwidth utilization for the network interface is relatively low. *Id.* at p 12, lines 6-9. More specifically, at least a portion of the data is received over the network at a point when the actual bandwidth

utilization is below a threshold level of utilization, which is calculated as a function of a maximum level of actual bandwidth utilization that has been identified.

Claim 1 (first of four independent claims)

Claim 1 is directed to a method of transferring a set of data over a network. Summarily, it is directed to monitoring the level of actual bandwidth utilization at a network interface and calculating a threshold level of utilization below which the transfer of data is not likely to interfere with other network activity. *Id.* at p. 12, lines 10-13. In accordance with the method of claim 1, the level of actual network bandwidth utilization for a network interface is monitored. *Id.* at p. 14, lines 15-20. A maximum of the monitored level of actual network bandwidth utilization is identified. *Id.* at p. 16, lines 8-12. A threshold level of utilization is then calculated as a function of the maximum monitored level of actual network bandwidth utilization. *Id.* at p. 16, lines 12-17. If the actual level of network bandwidth utilization falls below the threshold level, at least a portion of the set of data is received over the network. *Id.* at p. 17, lines 4-14.

Claim 22 (second of four independent claims)

Claim 22 is directed to a computer-readable medium have stored thereon a data structure. *Id.* at p. 13, lines 19-23. The data structure includes a first data field containing data representing a maximum monitored level, wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization. *Id.* Additionally, the data structure includes a second data field containing data representing a threshold level of network bandwidth utilization below which data may be transferred over the network without interfering with other network activity, wherein the second data field is derived from the first data field by calculating the threshold level as a function of the maximum monitored level. *Id.*

Claim 25 (third of four independent claims)

Claim 25 is directed to a computer-readable medium having computer-executable components for managing the transfer of data over a network. The components include a bandwidth monitoring component a threshold calculating component, and a transfer management component. The bandwidth monitoring component monitors the level of actual bandwidth utilization for a network connection and identifies a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization for the network connection. *Id.* at p. 14, lines 15-20; p. 16, lines 8-12. The threshold calculating component calculates a threshold level of utilization as a function of the maximum monitored level of utilization identified by the bandwidth monitoring component. *Id.* at p. 16, lines 12-17. The transfer management component manages the transfer of data over the network when the level of actual bandwidth utilization is less than the threshold level of utilization. *Id.* at p. 17, lines 4-14.

Claim 28 (fourth of four independent claims)

Claim 28 is directed to a method of communicating between a client process and a server process over a network includes: (a) issuing to the server process a first download request which identifies a file and which requests that the server process download a first segment of the file over the network, provided the actual network bandwidth utilization is less than a threshold level below which data may be transferred over the network without interfering with other network activity, wherein the threshold level is calculated as a function of a maximum monitored level, and wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization (*id.* at p. 17, lines 4-10); (b) downloading, by the server process, the first segment of the file (*id.* at p. 17, lines 9-10); (c) issuing to the server process a further download request which is associated with the file and which requests that the server process download a

further segment of the file over the network, provided the actual network bandwidth utilization is less than the threshold level (*id.* at col. 18, lines 20-21); (d) downloading, by the server process, the further segment of the file (*id.*); and (e) repeating steps (c) and (d) until the server process has downloaded each segment of the file over the network (*id.* at p18, lines 21-22).

VI. GROUNDS OF REJECTIONS TO BE REVIEWED ON APPEAL

A) Claims 1-9, 14-27, and 29-30 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,913,040 issued to Rakavy et al. (the "Rakavy reference") in view of International Publication No. WO 00/01123 (the "Chiu reference").

B) Claim 10 stands rejected under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference and the Chiu reference and further in view of U.S. Patent No. 6,285,662 issued to Watanabe et al. (the "Watanabe reference").

C) Claim 12 stands rejected under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference and the Chiu reference and further in view of U.S. Patent No. 6,427,169 issued to Elzur et al. (the "Elzur reference").

D) Claim 13 stands rejected under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference and the Chiu reference and further in view of U.S. Patent No. 6,078,591 issued to Kalkunte et al. (the "Kalkunte reference").

E) Claim 28 stands rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,463,468 issued to Buch et al. (the "Buch reference") in view of the Rakavy reference and further in view of the Chiu reference.

Appellants respectfully traverse all these rejections.

VII. ARGUMENT

A) The rejection of claims 1-9, 14-27, and 29-30 under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Chiu reference should be reversed because the Examiner has failed to establish a *prima facie* case of obviousness.

Initially, Appellants note that for a *prima facie* case of obviousness to be established, three criteria must be met: 1) there must be some suggestion or motivation to modify the reference or to combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the prior-art references must teach or suggest all the claim limitations. *See* MPEP § 2143. Moreover, the teaching or suggestion, and the reasonable expectation of success must be found in the prior art and not be based on applicants' disclosure. *See* MPEP § 706.02(j), § 2142, and § 2143. Appellants respectfully submit that a *prima facie* case of obviousness has not been established for claims 1-9, 14-27, and 29-30. In particular, the Rakavy and Chiu references, either alone or in combination, fail to teach or suggest all the claim limitations for each of these claims.

The Rakavy reference discusses a type of software technology that is referred to as a "Polite Agent." *Rakavy*, col. 13, lines 5-6. The Polite Agent "transmits information during periods of low line utilization." *Id.* at col. 13, lines 11-12, "Low line utilization occurs when the communications line is busy no more than a predetermined percentage of the time." *Id.* at col. 13, lines 35-36. At a point when "the communications resource utilization remains low and ample resources are available the software agent performs its designated data transfer task." *Id.* at col. 13, lines 23-25.

The "Polite Agent" software technology discussed in the Rakavy reference differs from that of Appellants' claimed invention in that the Rakavy software does not identify a maximum monitored level of actual bandwidth utilization, calculate a threshold level based on that maximum monitored level, and receive data over a network when the actual bandwidth

utilization is less than that calculated threshold. These are significant differences, because the transfer of data using the Appellants' claimed invention is not dependent on the percentage of time that a communications line is busy as in the Rakavy reference. Instead, under the Appellants' approach, a maximum monitored level of actual bandwidth utilization is identified and used to calculate a threshold level below which data may be received. As such, the claimed invention provides a substantial advantage over the Rakavy reference's solution in that the claimed invention optimizes the use of network bandwidth. By contrast, the Rakavy reference's solution is less effective because downloading data based on the percentage of time the network connection is busy will often result in underutilization of the network bandwidth (as explained in Appellants' specification at page 16, line 18 through pate 17, line 1).

The Examiner has acknowledged that the Rakavy reference fails to disclose multiple limitations of the claimed invention (*see, e.g., Office Action dated 08/19/2005*, p. 2), but has minimized the extent of the differences between the Rakavy reference and the claimed invention. As set forth by the United States Supreme Court in *Graham v. John Deere*, 383 U.S. 1 (1966), inquiries as a background for determining obviousness include, *inter alia*, determining the scope and contents of the prior art, and ascertaining the differences between the prior art and the claims at issue. *See, e.g.*, MPEP § 2141. In the present case, the Examiner has not adequately ascertained the differences between the Rakavy reference and the claimed invention. The approach in Rakavy does not involve identifying a maximum monitored level of actual bandwidth utilization, using that maximum monitored level to calculate a threshold level, and transferring data when the actual bandwidth utilization is less than that calculated threshold level. Rather, the Rakavy reference teaches a different approach based on the percentage of time the network connection is busy. Rakavy's approach is a less effective one for the reasons stated

above and in Appellants' specification at page 16, line 18 through page 17, line 1. Thus, the Appellants' claimed invention advances the state of the art beyond what is taught in the Rakavy reference.

The Chiu reference was cited by the Examiner in an attempt to demonstrate that the differences between the claimed invention and the Rakavy reference were merely obvious differences. However, the Examiner's conclusion is based on not only an incorrect understanding of Appellants' claimed invention as noted above, but an incorrect understanding of what is taught in the Chiu reference.

The Chiu reference relates to detecting network congestion and controlling the transmission rate of a transmitting station based on detected network congestion. *See Chiu*, p. 5, lines 1-23. Congestion in a network is detected at a receiving station by determining an increase in a number of missing messages. *Id.* at p. 5, lines 1-7. A transmitting station then responds to messages indicating congestion on the network by reducing its transmission rate. *Id.* at p. 5, lines 9-10. The transmitting station attempts to return to a previously measured high rate of transmission after each incident of rate reduction by adding a constant value to the transmission rate in a series of steps. *Id.* at p. 5, lines 9-16. This constant value is determined based on a chosen number of steps and the difference between the reduced rate of transmission and the previously measured high rate of transmission. *Id.* at p. 5, lines 17-19.

The Chiu reference simply does not teach or suggest any steps related to identifying a maximum monitored level of actual bandwidth utilization and calculating a threshold level (below which data may be transferred) as a function of the maximum monitored level. The Chiu reference is concerned with controlling the transmission rate of a transmitting station based on network congestion, not with transferring data over a network interface in a

manner that minimizes interference with other network activity. The Examiner appears to be either misinterpreting the Chiu reference or taking what the Appellants have taught in the present application and attempting to read these limitations into the Chiu reference. The Chiu reference simply does not discuss identifying a maximum of a monitored level of actual network bandwidth utilization and using this maximum monitored level to calculate a threshold level of utilization below which data may be transferred. In contrast, the Chiu reference discusses increasing a transmission rate from a reduced transmission rate (which was reduced as a result of network congestion) to a previously measured high rate of transmission by adding a constant value to the transmission rate in a number of steps. Appellants respectfully submit that computing an amount of additive increase for increasing from a reduced rate to a previous high rate of transmission as discussed in the Chiu reference is vastly different from calculating a threshold level of utilization below which data may be transferred as claimed by the present invention.

At best, the combination of the Rakavy and Chiu references would merely provide for a method of transferring data when a communications line is busy no more than a predetermined percentage of time and increasing the rate of the data transfer in a stepwise fashion during that time. There is simply no teaching or suggestion in either reference to identify a maximum monitored level of actual network bandwidth utilization, to calculate a threshold level as a function of the maximum monitored level, and to use that type of threshold to determine when to transfer data. Therefore, the proposed combination of the Rakavy and Chiu references would not achieve the claimed invention. Additionally, there is no suggestion from the prior art to modify the Rakavy reference, the Chiu reference, or the combination of references to achieve the claimed invention.

Because the Examiner has failed to establish a *prima facie* case of obviousness of claims 1-9, 14-27, and 29-30, at least as described hereinabove, Appellants respectfully request that the Examiner's rejection of these claims be reversed.

B) The rejection of claim 10 under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Chiu reference and further in view of the Watanabe reference should be reversed because the Examiner has failed to establish a *prima facie* case of obviousness.

Claim 10 depends indirectly from independent claim 1, and its rejection relies on the combination of the Rakavy and Chiu references similar to that for independent claim 1. Accordingly, the 103(a) rejection of claim 10 is improper for at least the reasons stated above with respect to independent claim 1, and Appellants respectfully request that the Examiner's rejection of claim 10 be reversed.

C) The rejection of claim 12 under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Chiu reference and further in view of the Elzur reference should be reversed because the Examiner has failed to establish a *prima facie* case of obviousness.

Claim 12 depends indirectly from independent claim 1, and its rejection relies on the combination of the Rakavy and Chiu references similar to that for independent claim 1. Accordingly, the 103(a) rejection of claim 12 is improper for at least the reasons stated above with respect to independent claim 1, and Appellants respectfully request that the Examiner's rejection of claim 12 be reversed.

D) The rejection of claim 13 under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Chiu reference and further in view of the Kalkunte reference should be reversed because the Examiner has failed to establish a *prima facie* case of obviousness.

Claim 13 depends indirectly from independent claim 1, and its rejection relies on the combination of the Rakavy and Chiu references similar to that for independent claim 1. Accordingly, the 103(a) rejection of claim 13 is improper for at least the reasons stated above

with respect to independent claim 1, and Appellants respectfully request that the Examiner's rejection of claim 13 be reversed.

E) The rejection of claim 28 under 35 U.S.C. § 103(a) as being obvious over the Buch reference in view of the Rakavy reference and further in view of the Chiu reference should be reversed because the Examiner has failed to establish a *prima facie* case of obviousness.

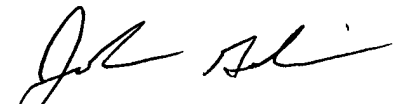
The Buch reference discloses a technique for free Internet access which involves a method for downloading video advertising files when a user is not actively using the Internet connection. As shown in FIG. 11 and described at column 12, Buch's method determines the ad block size based on the available data rate and perhaps also based on system resources. If the Internet connection is being used (e.g., to download content or to send/receive email), the method checks the availability of the connection again later. However, if the Internet connection is not being used, a request is sent to the ad server for information such as the file name, the offset from the file start where the block should be downloaded, and the determined ad block size.

The method in the Buch reference differs from that of Appellants' claimed invention in that Buch's method does not request and download data in the background of other network activity. The method in the Buch reference does not request and download data provided that the actual network bandwidth utilization is less than a threshold level that is calculated as a function of a maximum monitored level of actual network bandwidth utilization. Instead, the method in the Buch reference only requests and downloads data when the user is not actively using the Internet connection. These are substantial differences because the downloading of data using the claimed invention is not limited to times when the user's Internet connection is not being actively used as discussed in the Buch reference. Accordingly, the claimed invention provides a significant benefit over the method in the Buch reference in that data may be downloaded while

other network activity occurs. The Examiner acknowledges that the Buch reference fails to teach or suggest multiple limitations of independent claim 28 (*see, e.g., Office Action dated 08/19/2005*, p. 11), but minimizes the extent of the differences between the claimed invention and the Buch reference as noted above.

The Rakavy and Chiu references were cited by the Examiner in an attempt to demonstrate that the differences between the claimed invention and the Buch reference are merely obvious differences. However, the Examiner's conclusion is based on not only an incorrect understanding of Appellants' claimed invention with respect to the Buch reference as noted above, but an incorrect understanding of what is taught by the Rakavy and Chiu references. As noted above with respect to the obviousness rejection of claims 1-9, 14-27, and 29-30, the Rakavy and Chiu reference, either alone or in combination, fail to teach or suggest using a threshold level of utilization that is calculated based on an identified maximum monitored level of actual bandwidth utilization. Accordingly, the Buch, Rakavy, and Chiu references, either alone or in combination, fail to teach or suggest the method of claim 28. Moreover, there is no suggestion from the prior art to modify the Buch reference, Rakavy reference, Chiu reference, or the combination of the references to achieve the method of claim 28. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness for independent claim 28. As such, the 103(a) rejection of independent claim 28 is improper and should be reversed.

Respectfully submitted,



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Claims Appendix

1. A method of transferring a set of data over a network, the method comprising:

monitoring the level of actual network bandwidth utilization;

identifying a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual network bandwidth utilization;

calculating a threshold level of utilization as a function of the maximum monitored level of utilization; and

if the actual level is less than the threshold level, receiving at least a portion of the set of data over the network.

2. The method of claim 1, wherein a client receives the data over the network from a server.

3. The method of claim 2, wherein said monitoring occurs at the interface between the client and the network.

4. The method of claim 1, wherein the network is the Internet.

5. The method of claim 1, wherein the threshold level is equal to a predetermined percentage of the maximum monitored level.

6. The method of claim 1, wherein the set of data includes a software update.

7. The method of claim 1, further comprising repeating at least said monitoring step each time a portion of the set of data is received.

8. The method of claim 7, wherein said receiving step includes separately receiving a plurality of discrete portions of the set of data over the network when the actual level is less than the threshold level.

9. The method of claim 8, further comprising incrementing a counter each time a discrete portion of the data is received over the network.

10. The method of claim 9, wherein the size of the discrete portions of the data is a function of the value of the counter.

11. (Canceled)

12. The method of claim 9, further comprising clearing the counter after receiving all of the plurality of discrete portions of the data over the network.

13. The method of claim 9, further comprising clearing the counter if the level of actual utilization becomes greater than the threshold level.

14. The method of claim 8, further comprising suspending the receipt of discrete portions of the data if the level of actual utilization becomes greater than the threshold level.

15. The method of claim 14, further comprising resuming the receipt of discrete portions of the data from the point of suspension when the level of actual utilization becomes less than the threshold level.

16. The method of claim 1, further comprising:

repeating said monitoring step each time a portion of the set of data is received;

identifying a maximum level of utilization during receipt of the set of data; and

calculating a threshold level of utilization for the set of data as a function of the maximum level of utilization identified during receipt of the set of data.

17. The method of claim 16, wherein said identifying step includes estimating the maximum level of utilization during receipt of the set of data by calculating an average level of utilization for the set of data upon repeating said monitoring step a predetermined number of times during receipt of the set of data.

18. The method of claim 16, further comprising receiving at least a portion of the set of data over the network if the actual level is less than the threshold level for the set of data.

19. The method of claim 16, further comprising receiving at least a portion of a second set of data over the network if the actual level is less than the threshold level for the set of data.

20. A computer-readable medium having computer-executable instructions for performing the method recited in claim 1.

21. A computer system having a memory, an operating system and a central processor, said processor being operable to execute the instructions stored on the computer-readable medium of claim 20.

22. A computer-readable medium having stored thereon a data structure, comprising:

a first data field containing data representing a maximum monitored level, wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization; and

a second data field containing data representing a threshold level of network bandwidth utilization below which data may be transferred over the network without interfering with other network activity, wherein said second data field is derived from said first data field by calculating the threshold level as a function of the maximum monitored level.

23. The computer-readable medium of claim 22, wherein the threshold level is calculated as a predetermined percentage of the maximum monitored level.

24. The computer-readable medium of claim 22, wherein the actual network bandwidth utilization is monitored at an interface between a client machine and the network.

25. A computer-readable medium having computer-executable components for managing the transfer of data over a network, comprising:

a bandwidth monitoring component which monitors the level of actual bandwidth utilization for a network connection and identifies a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization for the network connection;

a threshold calculating component which calculates a threshold level of utilization as a function of the maximum monitored level of utilization identified by said bandwidth monitoring component; and

a transfer management component which manages the transfer of data over the network when the level of actual bandwidth utilization is less than the threshold level of utilization.

26. The computer-readable medium of claim 25, wherein the network connection is an interface between a client machine and the network.

27. The computer-readable medium of claim 25, wherein the threshold level is calculated as a predetermined percentage of the maximum monitored level.

28. A method of communicating between a client process and a server process over a network, the method comprising:

(a) issuing to the server process a first download request which identifies a file and which requests that the server process download a first segment of the file over the network, provided the actual network bandwidth utilization is less than a threshold level below which data may be transferred over the network without interfering with other network activity, wherein the threshold level is calculated as a function of a maximum monitored level, and wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization;

(b) downloading, by the server process, the first segment of the file;

(c) issuing to the server process a further download request which is associated with the file and which requests that the server process download a further

segment of the file over the network, provided the actual network bandwidth utilization is less than the threshold level;

(d) downloading, by the server process, the further segment of the file; and

(e) repeating steps (c) and (d) until the server process has downloaded each segment of the file over the network.

29. The method of claim 1, wherein a client machine receives the data over the network without substantially interfering with the ability of a user of the client machine to engage in other network activity.

30. The method of claim 1, wherein the data is received over the network without substantially interfering with any other network activity.